

A METHOD AND APPARATUS FOR ANTENNA ARRAY BEAMFORMING**Abstract of the Disclosure**

An antenna array beamforming technique employs independent transmit weighting coefficients for multiple subscriber units served by a transmitting communication device. Optimization of the weighting coefficients is a joint, rather than an independent, venture of the multiple subscriber units. Joint optimization preferably is implemented at the transmitting communication device and involves the communication device optimizing based on knowledge of the channels between itself and each of the subscriber units, as well knowledge of the inter-cell and intra-cell interference observed at each of the subscriber units. Joint optimization of the weighting coefficients is a complex process, and to simplify the process optimization criteria are defined that allow the weighting coefficients corresponding to the subscriber units to be optimized independently rather than jointly. Because this technique accounts for self-interference, it yields a weighting that is more nearly optimal than the current methods of transmit antenna array weighting.

5

10

15